Boeing Realty Corporation 3855 Lakewood Blvd. MC D001-0097

Long Beach, CA 90846-0001 Telephone: (562) 593-8699

Fax: (562) 593-8140



15 April 2004 C6-BRC-T-04-010

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

Los Angeles Region 320 W. 4<sup>th</sup> Street, Suite 200 Los Angeles, CA 90013

Attention:

John Geroch

339

Subject:

REQUEST FOR CLOSURE AND REPLACEMENT OF

GROUNDWATER MONITORING WELLS TMW-01, TMW-02, TMW-08 AND TMW-09, BOEING REALTY CORPORATION, FORMER C-6 FACILITY, 19503 SOUTH NORMANDIE AVENUE,

LOS ANGELES, CA

Dear Mr. Geroch:

Please find enclosed for your review, a copy of the subject document prepared by Haley & Aldrich, Inc. for Boeing Realty Corporation.

If you have any questions concerning this document, please contact the undersigned at (562) 593-8623.

Sincerely,

Robert Scott

**Boeing Realty Corporation** 

Cc: Mario Stavale, Boeing Realty Corporation

enclosure

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

Haley & Aldrich, Inc. 9040 Friars Road Suite 220 San Diego, CA 92108-5860 Tel: 619.280.9210 Fax: 619.280.9415 www.HaleyAldrich.com



31 March 2004 File No. 28882-604

Boeing Realty Corporation 3855 Lakewood Boulevard MC D001-0097 Long Beach, California 90806

Attention:

Mr. Brian Mossman

Subject:

Request for Closure and Replacement of Groundwater Monitoring Wells TMW-01, TMW-02, TMW-08 and TMW-09, Boeing Realty Corporation,

Former C-6 Facility, Los Angeles, California

Dear Mr. Mossman:

Haley & Aldrich, Inc. (Haley & Aldrich) has prepared this work plan to close and replace groundwater monitoring wells (Wells) TMW-01, TMW-02, TMW-08 and TMW-09, located in the Lot 8 area of the Boeing Realty Corporation's (Boeing) former C-6 Facility (Site) in Los Angeles, California (Figure 1). These four wells are proposed for closure and replacement due to their proximity to a building scheduled for construction during the Summer of 2004 (Figure 2).

### **BACKGROUND**

The four wells were installed in June 1998 by Kennedy/Jenks Consultants as part of a Site-wide groundwater assessment program, to facilitate sampling and measurement of groundwater conditions in the B-Sand unit of the Middle Bellflower Aquitard. All four wells proposed for closure and replacement are located within, or immediately adjacent to, the footprint of a new building proposed for construction on the Site during the summer of 2004. Copies of the well construction logs of the wells to be closed are included as Appendix A, and the well details are summarized in Table I.

#### **OFFICES**

Boston Massachusetts

Cleveland Ohio

Dayton Ohio

Detroit Michigan

Hartford Connecticut

Kansas City Kansas

Los Angeles California

Manchester New Hampshire

Newark New Jersey

Portland *Maine* 

Rochester New York

Santa Barbara California

Tucson Arizona

Washington
District of Columbia

Table I
Details of Monitoring Wells to be Closed

Well I.D.	Date Drilled	No. of Sampling Events	Casing Dia. (inches)	Meas. Pt. Elev. (feet msl)	Total Depth (feet bgs)	Screened Interval (feet bgs)
TMW-01	6/28/1998	12	2	56.46	91	66-86
TMW-02	6/28/1998	12	2	56.38	92	67-87
TMW-08	6/29/1998	10	2	53,99	89.5	61-81
TMW-09	6/29/1998	9	2	52.75	85	60-80

msl = Mean Sea Level

bgs = below ground surface

Note: These wells are part of the Site-wide monitoring well network and are scheduled to be sampled during the March 2004 Site-wide monitoring event. They will be replaced with wells to be installed outside the proposed building footprint at locations that meet the monitoring criteria of the Site-wide groundwater monitoring program.

The four wells are included in the Site-wide Groundwater Monitoring Plan (Haley & Aldrich, 2003a) which was approved by the California Regional Water Quality Control Board – Los Angeles Region (LARWQCB) on 28 May 2003. At this time, the design of the proposed Site building is evolving. An effort will be made to save these wells during building construction. However, if design constraints require that these wells be removed, replacement wells will be installed outside the proposed building footprint. The proposed locations of these replacement wells will be based on the monitoring criteria presented in the Site-wide Groundwater Monitoring Plan (Haley & Aldrich, 2003a) approved by the LARWQCB on May 28, 2003, as well as the building design and future land use constraints. The proposed locations of the four replacement wells, based on the proposed building footprint, are shown on Figure 2. If closure of any of the four existing wells is required, the proposed replacement strategy will be as follows:

- Groundwater monitoring well TMW-01 monitors the western extent of the Building1/36 VOC groundwater plume in the Bellflower B-Sand. The replacement well (i.e., MWB027) will be moved approximately 60 feet west, to a landscaped area on the western side of the proposed building footprint. The new well location will meet the criteria of monitoring the western edge of the groundwater plume;
- Groundwater monitoring well TMW-02 monitors the Building 1/36 groundwater plume source area in the Bellflower B-Sand. The replacement well (i.e., MWB028) will be moved approximately 40 feet northeast, to the truck loading dock area on the eastern side of the proposed building footprint. The new well location will meet the criteria of monitoring the groundwater plume source area;
- Groundwater monitoring well TMW-08 monitors the downgradient extent of the Building 1/36 VOC groundwater plume in the Bellflower B-Sand. The replacement well (i.e., MWB029) will be moved approximately 20-feet north, to the truck loading dock area on the eastern side of the proposed building footprint. The new well location will meet the criteria of monitoring the downgradient extent of the groundwater plume; and



Boeing Realty Corporation 31 March 2004 Page 3

Groundwater monitoring well TMW-09 monitors the crossgradient/downgradient extent of the Building 1/36 groundwater plume source area in the Bellflower B-Sand. The replacement well (i.e., MWB030) will be moved approximately 70 feet south, to a landscape area on the south side of the proposed building footprint. The new well location will meet the criteria of monitoring the lateral extent of the groundwater plume.

Due to the evolving building design, the proposed well locations may require further adjustment in the field. If further adjustment is required, Haley & Aldrich will verify that the monitoring criteria of the Site-wide Groundwater Monitoring Plan will be met by the revised location prior to installation.

The four replacement wells will be designed and installed in a manner similar to the wells being closed. The proposed replacement wells (i.e., MWB027, MWB028, MWB029 and MWB030, Figure 2) will be installed using hollow-stem auger to depths of 81 feet bgs with screened intervals of 20 ft (from 61 to 81 ft bgs) using 4 inch diameter, schedule 40, poly vinyl chloride (PVC) well casing and screen.

## PROPOSED WELL CLOSURE PROCEDURE

The closure of the four proposed wells, if necessary, will proceed as follows:

**Permitting** – Prior to closure activities, well destruction permits will be obtained from the Los Angeles County Department of Health Services (LACDHS) for the proposed wells.

**Groundwater Level Measurement** – Measure the depth to groundwater in the wells to be closed from the top of casing using an electronic water level indicator. The measurement will be recorded in the field log.

**Groundwater Sampling** – Every well to be closed will be sampled during the March 2004 annual Site-wide groundwater monitoring event according to the procedures in the 2004 Groundwater Monitoring Work Plan (Haley & Aldrich, 2003b). Since the groundwater monitoring wells will likely be closed within 90 days of this sampling event, no further groundwater monitoring will be performed prior to closure.

Well Closure – The wells will be closed by overdrilling the well casing and filter pack to the total depth of each well according to LACDHS requirements. The boring will then be backfilled with neat cement grout using a tremie pipe from the bottom of the augers as the augers are withdrawn. The volume of cement pumped into each boring will be greater than or equal to the volume of the borehole. The level of cement in the boring will be topped off periodically until it sets to a depth of approximately 10 ft bgs. The top 10 ft of the boreholes will then be backfilled with granular bentonite to allow for Site redevelopment excavation and grading. Well closure work will be performed by a California-licensed well contractor under the oversight of a California-licensed professional engineer or registered geologist. Well closure activities will comply with LACDHS permit requirements and State of California water well standards (California Department of Water Resources, 1981 and 1990).



Boeing Realty Corporation 31 March 2004 Page 4

### **SCHEDULE**

Well closure activities are planned to commence during the Summer of 2004 and replacement well installation activities may not be completed until Spring of 2005 due to the evolving Site redevelopment schedule. The replacement wells will most likely be installed following construction of the proposed building, parking, and landscape areas. Following well closure activities, a letter report will be submitted to the LARWQCB documenting the well closure activities within 60 days of the completion of field work. Replacement well installation activities will be discussed in the annual and semiannual groundwater monitoring reports.

Wastes generated by the well closure process will be containerized and profiled for subsequent disposal.

Haley & Aldrich's Site-Specific Health & Safety Plan (SHSP) and Addendums (Haley & Aldrich, 2001a, 2001b, & 2002) will be used for on-site personnel performing well closure activities. A copy of the SHSP has been previously submitted to the LARWQCB.

Should you have any questions concerning this well closure work plan or require additional information, please contact either of the undersigned.

No. 6195 DOC. NO.

04-04

Scott P. Zachary

Project Manager

Sincerely yours,

Haley & Aldrich, Inc.

Paul R. Sones, R.G.

Senior Hydrogeologist

Attachments:

Figure 1 – Site Location Map

Figure 2 – Groundwater Monitoring Wells to be Replaced

Appendix A - Well Construction Logs of Wells to be Closed



Boeing Realty Corporation 31 March 2004 Page 5

### **REFERENCES:**

- 1. California Department of Water Resources, 1981 & 1990, Water Well Standards: State of California (Bulletins 74-81 and 74-90).
- 2. Haley & Aldrich, Inc., 2001a, Site-Specific Health & Safety Plan for Boeing Realty Corporation Former C-6 Facility, 19503 South Normandie Avenue, dated 8 June 2001.
- 3. Haley & Aldrich, Inc., 2001b, Site-Specific Health & Safety Plan for Boeing Realty Corporation Former C-6 Facility, 19503 South Normandie Avenue, Addendum 1 dated 12 November 2001.
- 4. Haley & Aldrich, Inc., 2002, Site-Specific Health & Safety Plan for Boeing Realty Corporation Former C-6 Facility, 19503 South Normandie Avenue, Addendum 2 dated 30 October 2002.
- 5. Haley & Aldrich, Inc., 2003a, Site-wide Groundwater Monitoring Work Plan, Boeing Realty Corporation, Former C-6 Facility, Los Angeles, California, Prepared for Boeing Realty Corporation, Long Beach, California, dated 31 March, 2003.
- 6. Haley & Aldrich, Inc., 2003b, Groundwater Monitoring Work Plan 2004, Former C-6 Facility, Los Angeles, California, Prepared for Boeing Realty Corporation, Long Beach, California, dated 31 October, 2003.

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**FIGURES** 



BOE-C6-0066193

# APPENDIX A

Well Construction Logs of Wells to be Closed

Well Construction Log	T.	Kennedy/Jenks Consultants		
Building I		Boring/Well Name TMY	Y_1	
West Hazmat	DRILLER Ruben Lares		g C-6	
DRILLING METHOD (S)  CME 75, Hollow Stem Auger (LAR)	DRILL BIT (S) SIZE 8"	Project Number 98400		
BLANK CASING	FROM TO FT	ELEVATION	TOTAL DEPTH	
2" PVC Schedule 40 PERFORATED CASING	+1 61 FROM TO FT I	Not Surveyed Date Started	B6 ft.  DATE COMPLETED	
2" PVC Schedule 40, 0.010" slot SIZE AND TYPE OF FILTER PACK	61 81 FROM TO FT I	6/28/98 DEPTH TO WATER	6/28/98	
Lonestar 2/12 Sand	59 86	66,0 ft.		
SEAL Enviroplug Medium Bentonite Chips	FROM TO FT	LOGGED BY M. Deldarman		
GROUT	FROM TO SY FT S	M. Balderman SAMPLING METHODS	WELL COMPLETION	
No Grout (Temporary Well)		2" Split Barrel Sampler, 140 lb. Hammer	STAND PIPE FT	
SAMPLES Depair WELL CONSTRUCTION (feet)	N Graphic USCS Munsell Log Color	SOIL DESCRIPTION AN	D DRILLING REMARKS	
<b>∞</b> 9		Concrete, 8"		
12 13 14 14 14 21 17 18 0.8		Fine Sandy CLAY: dark brown, da with CaCO3		
	CL 7.5YR 3/3	hard nodules of carbonate up to 1/4	", damp, medium stiff	
18 0.9 10 - - - -	CL 7.5YR 4/4	Silty CLAY: brown, trace of fine sa	and, damp, stiff	
15-				
9 30 1.0 20	SM 7.5YR 4/4	Fine Silty SAND: brown, 60% sand	d, trace of fine mica, damp, dense	
25 - No Grout				
8 30 1.4 30 - 35 - 35 - 35 - 35 - 35 - 35 - 35 -				

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Well	Con	struc	etion	Log

	 MPLI				ion Log				Kennedy/Jenks Consultants
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	₩.	8 40 45	2.0	45 - 50 -	Blank Casing		SM	7.5YR 4/2	brown, 65% sand, minor clay, very dense
				55 - - - - 60 -	Bentonite Seal				
-		22 43 50 21 37 50	3.9 5.1	65 -	Screened Casing  Depth to Water		SM/ SP &CL	7.5YR 4/2	interbedded with fine sand, moist water at 66 feet interbedded with fine sandy clay
				75 -	Bottom of Screen				

Vell Const	tructi	on Log	<del>,</del>	,		Kennedy/Jenks Consultants
SAMPLES	_					Boring/Well Name TMW-1 Project Name Boeing C-6
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Kennedy/Jenks Consultants

BORING L	Build								Boring/Well Name TM	W-2
DRILLING COMPANY West Hazmat Tracy							Project Name Boeing C-6			
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BLANK C	ASING			em Auger	FROM	ĩ	o	FT	ELEVATION	TOTAL DEPTH
PERFORA	Z" P'	VC Sch ASING	edule 4(	)	FROM .	<u>+1</u>	0		Not Surveyed DATE STARTED	87 ft.
SIZE AND	2" P	VC Sch	edule 40	), 0.010" slot	FROM	62 <u> </u>	Ō	82	6/28/98 DEPTH TO WATER	6/28/98
			2 Sand		1	57		87 FT	67.0 ft.	
	Envi	roplug	Mediun	Bentonite Chips		51		57	J. Knight SAMPLING METHODS	WELL COMPLETION
GROUT	No G	rout (I	empora	ıry Well)	FROM	1	Ó	r ı	1	SURFACE HOUSING NONE
									2" Split Barrel Sampler, 140 lb. Hammer	D 3419 CHATZ
	AMPLES	Τ	Depth (fort)	WELL CONSTRUCTION	3 <b>X</b> '	Graphit Ling	USCS	Menseli Color	SOIL DESCRIPTION A	AND DRILLING REMARKS
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	A WAY OF THE PARTY	THE RECOGNISHES AND ADDRESS OF THE PROPERTY OF	A CARLO CONTRACTOR CON		55 ~	Bentonite Seal			u dahada da	change noted by driller at 58'
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Kennedy/Jenks Consultants

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Well Construction Log

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DRILLING COMPANY  West Hazmat  Ruben Lares											ing C-6
ORILLING METHOD (5)  CME 75, Hollow Stem Auger  ORILL BIT (8) \$IZE										Project Number984	006.00
BLANK CASING FROM TO FT										ELEVATION Not Surveyed	TOTAL DEPTH 86 ft.
•										DATE STARTED	DATE COMPLETED
2" PVC Schedule 40, 0.010" slot 61 81										6/30/98 DEPTH TO WATER	6/30/98
SEA1.	***************************************	Lon	estar 2/1	2 Sanc	<u> </u>	FROM	66 ft.				
		Env	roplug	Mediu	m Bentonite Chips	5	6.5		59	J. Knight	incodes and great a taken thinks the control of the
GRO		No (	Grout (T	empor	rary Well)	FROM	τ	0	FT		WELL COMPLETION  SURFACE HOUSING NONE
	~~~	inanano	<del></del>							2" Split Barrel Sampler, 140 lb. Hammer	STANOPIPE FT
	- 1 <sup>5</sup> A	PLE:		Florest		<u> </u>	Transie	Lucal	A		
Drives	Recorered Collected	Blows 3er 6.	Ficad Space Space Space Space	Depth (fees)	WELL CONSTRUCTION		Graphic Log	USCS Log	Munsell Cales	SOIL DESCRIPTION A	AND DRILLING REMARKS
	<u> </u>	I E E	12228		· · · · · · · · · · · · · · · · · · ·			\$ -		Concrete, 8"	
<b>X</b>		12						ML	10YR 4/6		own, trace of fine sand, slightly moist,
<b>X</b>		21								very stiff	
			4								
<b>XXX</b>	<b>8</b> 4	,,					<i>}</i>	<b>}</b> - ↓		The states access acces	and the second s
		12 22 40	86.0	5				CL	10YR 3/6	Silty CLAY: dark yellowish bromoist, hard	wn, some fine sandy lenses, slightly
T X		40								previous natu	
										**************************************	
		*************	V. ameliki C. Chandoo			Comments of the comments of th					
<b>XX</b> X	8	27		[,,					10YR 5/4	yellowish brown, dry, hard	
*		27 30 30	85.7	10							
		-									
										-	
.				15-							
				13							
.,,.,	-										
		Marie Contract									
	- Andrews									-	
		J 12		20-			Ш		2.5Y 5/4	Claves CH To living a live beauty	trace of fine sand, dry, very stiff
<b>XX</b>		12 17 23	48.2					ML	2.31 3/4	Lizycy Statt Hgm onve brown,	trace or the said, dry, very sun
.	***************************************					and the second s	-			*	
.		***************************************	home you wanted	-							
-	B0000000000000000000000000000000000000	1		25							
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		-			No Grout		-				
-	***************************************	***************************************									
	**	No.					-				
		21 28 28 50	51.4	30-				ML.	2.5Y 5/6	Sandy SILT: light olive brown,	fine sand, sligtly moist, hard
222	XX	50									
-			-	4			4			<u> </u>	
,				-		Reporter common of					
	*		S. C. Gardina	-						-	
-	to describe the closes	000000000000000000000000000000000000000		35-			-			-	
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Well Construction Log Kennedy/Jenks Consultants										
SAMPLES										Boring/Well Name TMW-9
ي	parae	rx ked	<b>\$</b> 5.	Head Space Reading (mg/L)	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munaeil Color	Project Name Boeing C-6
Driver	Reco	ិ៍	ž ž	2411	-35-		111111			Project Number 984006.00 Sandy SILT (continued)
-			20 25 30	74.1	40 -	No Grout		SM	2.5Y 5/6	Silty Fine SAND: light olive brown, slightly moist, dense
-					45 -					
-		**	23 50	114	50 -	Blank Casing				increasing silt content, very dense
1					55 - 	-				
					60 -	Bentonite Seal				
					2	Screened Casing				
		XX.	12 32 50 42 30 32	159	65 - -	Depth to Water		SM	2.5Y 4/3	SAND with Silt: olive brown, fine, very moist, very dense, with silt lenses water at 66'
					70 -					
					75 -			**************************************		
-		THE THE PROPERTY OF THE PROPER			80 -	Bottom of Screen				

Well Construction Log

	Well Construction Log						T	T		Remedy/Jenks Consultants
SAMPLES			***************************************						Boring/Well Name TMW-9	
, l	vered	Seed		_ <b>.</b> . #5	Depth (feet)	WELL CONSTRUCTION	Graphic Log	USCS Log	Munsell Color	Project Name Boeing C-6
Driven	Reco	S.	# E	Fred Redding	-80 <del>-</del>		LOI	Log	Color	Project Number 984006.00 SAND with Silt (conunued)
$\Pi$			1		UV T	<b>沙里</b> 湖。				SAND with Silt (continued)
		-								
		***************************************			~-	Bottom of Screen			n wanten	
		-			•				-	_
		***************************************			85 -				10.00	-
				- conference conference con		Bottom of Well		ļ		
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	i				-	-				Boring Terminated at 86 feet.
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	Standard Comments	· contractions			-					
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